

## CLAIMS

1. A paper processing device which comprises a discriminating portion to sense papers passing by a specified sensor, and by carrying out a discriminating process according to the result of the sensing to apply one of plurally classified discriminating results to the sensed papers, and wherein, in every process, one paper or more to be objectives of the one process is transferred one by one along a transfer route that passes through the discriminating portion, and transfer routes of each paper after passing through the discriminating portion is changed according to discriminating results at the discriminating portion, the paper processing device comprising:

a sensor output abnormality detecting portion that carries out a detecting process to detect that the output of the sensor is in a specified abnormal status according to the output of the sensor before the start of one process, and when the specified abnormal status is detected in the detecting process conducted before the start of the one process, further carries out a detecting process to detect the output of the sensor also after the start of the one process; and

a transfer control portion that starts the one process even when either of the specified abnormal status or normal status is detected in the initial detecting process conducted before the start of the one process by the sensor output abnormality detecting portion, and in the case where

the specified abnormal status is detected in the initial detecting process, transfers papers that pass through the discriminating portion after the start of the one process until normal status is detected in the detecting process of the sensor output carried out after the start of the one process, along a transfer route corresponding to the specified abnormal status after they pass through the discriminating portion.

2. A paper processing device according to claim 1, wherein the discriminating portion carries out a discriminating process including a discriminating result that a paper is abnormal as one of the discriminating results, and

the transfer control portion transfers, in the case where the specified abnormal status is detected in the initial detecting process conducted before the start of one process by the sensor output abnormality detecting portion, papers that pass through the discriminating portion after the start of the one process until normal status is detected in the detecting process carried out after the start of the one process, along the same transfer route as the case wherein discriminating result that a paper is abnormal is obtained at the discriminating portion.

3. A paper processing device according to claim 1, further comprising a pool portion for storing papers that have been transferred along the transfer route corresponding to the specified abnormal status,

wherein the transfer control portion transfers again papers stored in the pool portion, after the sensor output abnormality detecting portion detects normal status, along the transfer route to pass through the discriminating route.

4. A paper processing device according to claim 1, wherein the sensor output abnormality detecting portion carries out the detecting process of the sensor output before the start of one process, and when the specified abnormal status is detected in the detecting process carried out before the start of the one process, carries out a detecting process at every time when one of papers to be objectives of the one process passes through the discriminating portion, after the start of the one process, and until the number of the papers passing through the discriminating portion reaches a specified number, and until normal status is detected by the sensor output abnormality detecting portion.

5. A paper processing device according to claim 1, wherein the sensor output abnormality detecting portion carries out the detecting process of the sensor output before the start of one process, and when the specified abnormal status is detected in the detecting process carried out before the start of the one process, it starts the one process and carries out a detecting process after a specified number of papers to be objectives of the one process has passed through the discriminating portion.

6. A paper processing device according to claim 1, wherein the paper processing device can freely transfer mock papers different from papers to be objectives of processing along a transfer route passing through the discriminating portion,

the transfer control portion starts the one process after the specified abnormal status is detected in detecting process carried out before the start of one process by the sensor output abnormality detecting portion, and when it is detected that recovery to normal status has not been achieved even in the detecting process carried out at a specified moment after the start of the one process, the transfer control portion suspends transfer of papers after the specified moment among papers to be objectives of the one process, and transfers the mock papers along a transfer route passing through the discriminating portion, and

the sensor output abnormality detecting portion carries out a detecting process also after the mock papers pass through the discriminating portion.

7. A paper processing device according to claim 1, wherein the sensor is a line sensor comprising a plurality of sensor devices arranged in width direction crossing the paper passing direction at the discriminating portion, and

the sensor output abnormality detecting portion detects that the output of a specified number or less of

the sensor devices among the plural sensor devices is faulty as the specified abnormal status.

8. A paper processing device according to claim 1, wherein for at least the detecting process to be carried out before the start of one process, the sensor output error detecting portion carries out a detecting process wherein the specified abnormal status is further divided into a specified first abnormal status and a specified second abnormal status, and also carries out the detecting process of the sensor output also after the mock papers pass through the discriminating portion, and

the transfer control portion starts the one process when either the first abnormal status among the specified abnormal statuses or normal status is detected in the initial detecting process carried out before the start of one process by the sensor output abnormality detecting portion, while when the second abnormal status among the specified abnormal statuses is detected in the initial detecting process, the transfer control portion transfers the mock papers along a transfer route passing through the discriminating portion prior to the start of the one process.

9. A paper processing device according to claim 8, wherein the mock papers are longer with respect to the width direction crossing the transfer direction than the papers to be objectives of processing,

the sensor is a line sensor comprising a plurality of sensor devices arranged even to the position exceeding the passing area of the papers to be objectives of processing, in the width direction crossing the passing direction of the papers at the discriminating portion, and

the sensor output abnormality detecting portion detects that the output of a specified number or less of the sensor devices among the plural sensor devices is faulty as a specified abnormal status, and detects the status wherein all the sensor devices with faulty output are sensor devices in the passing area of the papers to be objectives of processing as a first abnormal status among the specified abnormal statuses, and also detects the status wherein sensor devices out of the passing area are included in the sensor devices with faulty output as a second abnormal status among the specified abnormal statuses.